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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/716,708 | 11/20/2000 | Wolfgang Siebert | SIEBERT ET AL 2 | 6782 |

7590 05/13/2002

COLLARD & ROE, P.C.
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Roslyn, NY 11576

EXAMINER

RAO, SHRINIVAS H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2814 | |

DATE MAILED: 05/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/716,708

Applicant(s)

SIEBERT ET AL.

Examiner

Steven H. Rao

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Applicant's election with traverse of Group I claims in Paper No. 6 is acknowledged. The traversal is on the ground(s) that Applicants' allege that all claims are directed to, "a unitary inventive concept" it is noted for the record that the instant application is a regular U.S. application claiming priority from a German Patent Application No. 19960823.

This is not found persuasive because a regular U.S. application (like the instant application) the standard used is not "a unitary inventive concept", but rather the standard stated under 35 USC 121, 37 CFR 1.141 and MPEP 802.01 wherein if the inventions are "independent and distinct" a restriction is proper. As previously stated the three groups of inventions are independent and distinct for reasons stated therein and therefore the restriction requirement is proper.

The requirement is still deemed proper and is therefore made FINAL.

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) claiming priority from German Patent Application No. 19960823.7 filed December 16, 1999, which papers have been placed of record in the file.

The Ids filed November 20, 2000 has been placed of record in the file. The references listed on PTO -1449 have been considered.

However foreign references have been considered to the extent understood from the translation provided and the drawings in the foreign references.

The initialed pto-1449 has been placed in the file, with instructions to the contract employees to mail a copy of the PTO- 1449 along with the instant office action.

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (U.S. Patent no. 6,284,384, herein after Wilson). And Vepa (EPA No. 684634 ,Krishna Vepa et al., herein after Vepa, cited by the applicants' in their IDs).

With respect to claim 1, Wilson describes a semiconductor wafer (Wilson fig. 1 #1, col.8 line31) with a front surface (fig.1 # 3, col.8 line 32) and a back surface (fig. 1 # 5, col. 8 line 33) and an epitaxial layer of semi conducting material deposited on the front surface(col. 9 lines 49-50), wherein the surface of the epitaxial layer has a maximum density of 0.14 localized light scattering per cm^2 with a cross section of greater than or equal to 0.12Um (Wilson col. 8 lines 4-10) .

The front surface of the wafer prior to the deposition of epitaxial layer, has a surface roughness of 0.05 to 0.29 nm RMS, measured by AFM on a 1 Ux1Um reference area.

Wilson does not specifically describe the front surface of the wafer prior to the deposition of epitaxial layer, has a surface roughness of 0.05 to 0.29 nm RMS, measured by AFM on a 1 Ux1Um reference area.

However, Vepa a patent from the same filed of endeavor, describes a polishing method that produces an average surface roughness of not greater than 1.0 nm Ra to produce a wafer with improved surface roughness with reduced haze.

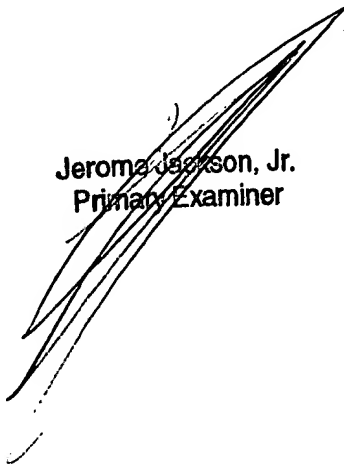
Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to Vepa's surface roughness parameters in Wilson's polishing and cleaning technique (Wilson col. 17 lines 1-5) to produce a wafer with improved surface roughness with reduced haze. (Vepa page 3 lines 3-5).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (703) 3065945. The examiner can normally be reached on 8.00 to 5.00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 3067722.

Steven H. Rao
Patent Examiner

May 8, 2002


Jerome Jackson, Jr.
Primary Examiner